



Australian Bureau of Statistics

1352.0.55.106 - Research Paper: Small Area Estimation with Simulated Samples from the Population Census (Methodology Advisory Committee), November 2009

Latest ISSUE Released at 11:30 AM (CANBERRA TIME) 18/07/2011 First Issue

Summary

About this Release

Small area estimation involves producing estimates for small geographical regions for which direct survey estimates are statistically unreliable. This is achieved by constructing a model involving auxiliary variables as well as survey data and using it to predict for all units not surveyed. Analytical Services Branch has been researching and applying small area estimation (SAE) techniques since 2003, including recently evaluating small area estimates (SAEs) of labour force status at the local government area (LGA) level. The primary quality measures for SAEs are their estimated relative root mean squared errors (RRMSEs). This paper describes an investigation into the quality of the SAEs and estimated RRMSEs. This investigation concluded that the small area estimates of labour force status are generally of reasonable quality. Exceptions occur for local government areas with low average sample sizes due to being in remote parts of Australia or having small populations. The major cause of bias in the estimates is the difference between the parameter estimates in models fitted to the whole population and those in models fitted to samples, with bias due to the model choice being the secondary cause. RRMSE estimates are generally conservative but can greatly underestimate the mean squared error for some local government areas with small average sample sizes.

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